

Serial No. 10/658,422
Reply to Office Action dated July 19, 2005

Docket No. KAGEI-0100-DIV

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

What is claimed is:

28. (Canceled) A method for treating substrate surfaces, comprising the steps of: placing a substrate in a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby splitting water vapor into a reducing active member [H.] and an oxidative active member [OH]; and letting said reducing and oxidative active members [H.] and [OH] contact with a surface of said substrate to be treated.

29. (Canceled) A method for treating substrate surfaces, comprising the steps of: horizontally transferring a substrate into a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby decomposing organic substances deposited on a surface of said substrate and at the same time splitting water vapor into a reducing active member [H.] and an oxidative active member [OH]; and subjecting said reducing and oxidative active members [H.] and [OH] to reactions with decomposition products of said organic substances.

30. (Canceled) A method for treating substrate surfaces, comprising the steps of: horizontally transferring a substrate into a mixed atmosphere of an inert gas and water

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vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby decomposing organic substances deposited on a surface of said substrate and at the same time splitting water vapor into a reducing active member [H.] and an oxidative active member [OH]; dry-washing and minimizing contact angle of a surface of said substrate by subjecting said reducing and oxidative active members [H.] and [OH] to reactions with decomposition products of said organic substances; wet-washing the substrate by supplying a wash liquid thereto; and drying said substrate.

31. (New) A method for cleaning a substrate surface on a moving conveyor, comprising:

dry washing the substrate to introduce the substrate into a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp;

decomposing organic substances deposited on the surface of the substrate with the dielectric barrier discharge lamp while splitting water vapor into a reducing active member [H •] and an oxidative active member [• OH] to cause reactions with the decomposition of the organic substances by means of the reducing and oxidative members [H •] and [• OH];

wet washing step the substrate to remove inorganic contaminants by supplying washing water on the surface of the substrate; and

drying the substrate to eliminate washing water from the substrate surface.

32. (New) A method for applying a liquid developer on a substrate surface on a moving conveyor, comprising:

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wet washing the substrate by supplying washing water to the surface of the substrate;

drying the substrate to eliminate washing water from the substrate surface;

placing the substrate in a mixed atmosphere of an inert gas and water to improve the contact angle of the substrate surface and thus improving the surface of the substrate, the inert gas and water vapor being under irradiation of ultraviolet light from a dielectric barrier discharge lamp to decompose organic substances deposited on a surface of the substrate while splitting water vapor into a reducing active member [$H \cdot$] and an oxidative active member [$\cdot OH$];

subjecting the reducing and oxidative members [$H \cdot$] and [$\cdot OH$] to reactions with decomposition products of the organic substances; and

coating the surface of the substrate with a liquid developer.